

May, 9, 2010 3:00PM

NO. VO/0 F.

Miller, Ronald (2998505) - 5/2/2016



## Providence Heart Institute

Non Invasive Cardiology  
 16001 West Nine Mile Road  
 Southfield, MI 48075  
 (248) 849-2000  
 (248) 849-2269 fax



### Stress Echocardiogram

|                 |                       |             |  |
|-----------------|-----------------------|-------------|--|
| Patient:        | Miller, Ronald        | Study Date: | 05/02/2016                                   |
| MRN:            | 2998505               | FIN#:       | P102994324                                   |
| DOB:            | 11/14/1950 (65 years) | Accession#: | 3497816004                                   |
| Gender:         | Male                  | Ht/Wt:      | 185.4 cm / 88.6 kg                           |
| Patient Status: | Outpatient            | BSA/BMI:    | 2.15 m <sup>2</sup> / 25.8 kg/m <sup>2</sup> |
| Study Location: | Echo Lab              | BP:         | 175/111mm/Hg                                 |

**Interpreting Physician:** McKendrick, Gregor MD

**Stress Tech:** Moody, Crystal

**Referring Physician:** McGraw, Steven DO;

**Sonographer:** DiCello, Patty RDCS Shehu, Alketa RDCS

**Indications:** Chest Pain.

**History:** PMH: Smoker (former).

### Study Conclusions

- **Stress echo:** Maximal asymptomatic exercise stress test without ECG or echo findings to indicate stress induced ischemia.
- **Left ventricle:** The cavity size is normal. Wall thickness is mildly increased. Systolic function is normal. The estimated ejection fraction is 65-70%. Grade I - LV Diastolic Impairment.
- **Right ventricle:** Wall thickness is normal. Systolic function is normal.
- **Mitral valve:** Grossly normal valve. There is trivial regurgitation.
- **Aortic valve:** Grossly normal valve. Trileaflet. No significant regurgitation.
- **Tricuspid valve:** Mild regurgitation, with no pulmonary hypertension.

**Procedure information:** Routine. Stress echocardiogram.

- Initial setup. The patient was brought to the laboratory. A baseline ECG was recorded.
- Transthoracic stress echocardiography. Images were captured at baseline and peak exercise.

**Image Quality:** Good

**Consent:** The risks, benefits, and alternatives to the procedure were explained to the patient and informed consent was obtained.

**Study completion:** There were no complications.

### Chamber Size and Function

**Left ventricle:**

- The cavity size is normal. Wall thickness is mildly increased. Systolic function is normal. The estimated ejection fraction is 65-70%. Wall motion is normal; there are no wall motion abnormalities.

May. 9, 2016 3:06PM

NO. VO/0 T. L

**Miller, Ronald (2998505) - 5/2/2016**

- Grade I - LV Diastolic Impairment.

**Left atrium:**

- The atrium is normal in size.

**Right ventricle:**

- Wall thickness is normal. Systolic function is normal.

**Right atrium:**

- Well visualized.

**Vessels:**

- Aortic root:** The aortic root is normal in size.
- Ascending aorta:** The ascending aorta is normal in size.
- Inferior vena cava:** The vessel is normal in size.

**Pericardium:**

- The pericardium is normal in appearance. There is no evidence of pericardial effusion.

**Valves****Aortic valve:**

- Grossly normal valve. Trileaflet.
- No significant regurgitation.

**Mitral valve:**

- Grossly normal valve.
- There is trivial regurgitation.

**Tricuspid valve:**

- Grossly normal valve.
- Mild regurgitation, with no pulmonary hypertension.

**Pulmonic valve:**

- Grossly normal valve.
- There is no significant regurgitation.

**Stress Echo Examination****Baseline ECG:** Normal. Normal sinus rhythm.**Stress testing:** Bruce protocol. Exercise duration 3 min (stage 1, 4.6 mets). Exercise was terminated due to achievement of target heart rate.**Stress results:**

- Maximal asymptomatic exercise stress test without ECG findings to indicate stress induced ischemia.
- Maximal heart rate during stress was 134 bpm (86% of maximal predicted heart rate). The maximal predicted heart rate was 155 bpm. The target heart rate was achieved.
- There is a normal resting blood pressure with a normal response to stress. Peak Blood Pressure: 214/99 mmHg.
- The patient experienced no chest pain during stress.
- No complications.
- The stress ECG is negative for ischemia. Duke scoring: Exercise time 3 min. Maximum ST deviation: 0 mm no angina resulting score is 3. This score predicts a moderate risk of cardiac events.

| Stage    | HR | BP (mmHg)     | Symptoms |
|----------|----|---------------|----------|
| Baseline | 69 | 175/111 (132) | None     |

May. 9. 2016 3:07PM

No. 0678 P. 3

Miller, Ronald (2998505) - 5/2/2016

|                  |     |               |   |
|------------------|-----|---------------|---|
| Stage 1          | 134 | -             | - |
| Recovery; 1 min  | 122 | -             | - |
| Recovery; 2 min  | 91  | 214/98 (137)  | - |
| Recovery; 3 min  | 69  | 212/112 (145) | - |
| Recovery; 5 min  | 68  | 194/112 (139) | - |
| Recovery; 10 min | 68  | 180/100 (127) | - |

**Post stress:**

- Left ventricular size is smaller.
- Left ventricular global systolic function is hyperdynamic.
- No evidence for new left ventricular regional wall motion abnormalities.

**Stress echo results:** Maximal asymptomatic exercise stress test without ECG or echo findings to indicate stress induced ischemia.

**Measurements**

| Left ventricle                          | Value                     | Reference |
|---|---------------------------|-----------|
| LV ID, ED, PLAX chordal                 | 3.9 cm                    | —         |
| LV ID, ES, PLAX chordal                 | 2.2 cm                    | —         |
| LV fx shortening, PLAX chordal          | (H) 44%                   | 25 - 43   |
| LV PW thickness, ED                     | (H) 1.1 cm                | 0.6 - 1.0 |
| IVS/LV PW ratio, ED                     | 1.09                      | —         |
| Ventricular septum                      | Value                     | Reference |
| IVS thickness, ED                       | (H) 1.2 cm                | 0.6 - 1.0 |
| LVOT                                    | Value                     | Reference |
| LVOT ID, S                              | 2.2 cm                    | —         |
| LVOT area                               | 3.80 cm <sup>2</sup>      | —         |
| Aorta                                   | Value                     | Reference |
| Aortic root ID, ED                      | 2.9 cm                    | <4.2      |
| Ascending aorta ID, A-P, S              | 3.3 cm                    | —         |
| Left atrium                             | Value                     | Reference |
| LA ID, A-P, ES                          | (L) 2.6 cm                | 3.0 - 4.0 |
| LA ID/bsa, A-P                          | (L) 1.2 cm/m <sup>2</sup> | 1.5 - 2.3 |
| LA volume, biplane                      | 37 ml                     | —         |
| LA volume/bsa, ES, 2-p                  | 17 ml/m <sup>2</sup>      | —         |
| Mitral valve                            | Value                     | Reference |
| Mitral E-wave peak velocity             | 0.65 m/sec                | —         |
| Mitral A-wave peak velocity             | 0.67 m/sec                | —         |
| Mitral E/A ratio, peak                  | 1                         | —         |
| Tricuspid valve                         | Value                     | Reference |
| Tricuspid regurg peak velocity          | 1.84 m/sec                | —         |
| Tricuspid peak RV-RA gradient           | 14 mm Hg                  | —         |
| Tricuspid maximal regurg velocity, PISA | 1.84 m/sec                | —         |

Miller, Ronald (2998505) - 5/2/2016

**Legend:**

(L) and (H) mark values outside specified reference range.

---

Electronically signed by:

McKendrick, Gregor MD

05/02/2016 16:53